

DIFFERENCE B/W SET AND LIST :

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Difference between Set and List

- 1 Duplicate Elements
 - List allows duplicate elements.
 - Set does not allow duplicates (every element must be unique).
- 2 Order of Elements
 - List maintains insertion order (elements stay in the order you add them).
 - Set does not guarantee order
- 3 Indexing and Position
 - List has index-based access (you can get element by list.get(index)).
 - Set does not have index (no positional access). It store data according to hashcode values(every object has unique integer value that is a hashcode v values)
- 4 Null Values
 - List allows multiple null values.
 - Set allows only one null value.
- 5 When to Use
 - Use List when order matters or duplicates are allowed.
 - Use Set when uniqueness is important.

Operation	List	Set
Search	Slower (if searching element directly)	Faster in HashSet (O(1) average)
Insertion	Faster at end	Slower if duplicates exist (needs check)

- 7 Implementations
 - List Examples: ArrayList, LinkedList, Vector
 - Set Examples: HashSet, LinkedHashSet, TreeSet
- 8 Common Use Cases
 - List - To maintain ordered items like names in a roll call.
 - Set - To store unique items like Employee IDs, Student Roll Numbers.

Feature	List	Set
Duplicates	✔ Allowed	✗ Not Allowed
Order	✔ Maintains Order	✗ No Guarantee
Indexing	✔ Yes	✗ No
Nulls	✔ Multiple	✔ Only One
Best for	Ordered, duplicates data	Unique data